

**REMARKS**

**Priority and Substitute Sequence Listing**

The Examiner has stated that SEQ ID NO:61 and SEQ ID NO:62 are not supported by application PCT/US97/05959 to which the instant application claims priority. Specifically, the Examiner states that SEQ ID NO:61 and SEQ ID NO:62 of application PCT/US97/05959 are not identical to SEQ ID NO:61 and SEQ ID NO:62 of the instant application. In support of his position, the Examiner has provided an alignment of the corresponding sequences from application PCT/US97/05959 and the instant case. These alignments show there is a single nucleotide difference between SEQ ID NO:61 of application PCT/US97/05959 and SEQ ID NO:61 of the instant case, which translates into a single amino acid difference between SEQ ID NO:62 from the priority case and the instant case. In view of this, the Examiner has afforded the instant application the effective filing date of March 4, 1999.

Applicants have reviewed the Sequence Listing for the instant application and for PCT/US97/05959, since these were believed by Applicants to be identical, noting that the present application is a continuation of U.S. Application Serial No. 09/171,156, which is a national stage filing under 35 U.S.C. § 371 of PCT/US97/05959. Applicants and their representatives were surprised to confirm that the Examiner is correct in stating that SEQ ID NO:61 and SEQ ID NO:62 of application PCT/US97/05959 do not have 100% identity with the corresponding SEQ ID NO's from the instant case. Specifically, SEQ ID NO:61 in the instant application differs from SEQ ID NO:61 in PCT/US97/05959 by a single nucleotide substitution (a change in codon 328-330 from AAT to ATT), which resulted in a substitution of an isoleucine residue for the original asparagine residue in SEQ ID NO:62.

Upon further review, Applicants and their representatives have determined that the electronic file of the Sequence Listing in the present application was modified during the prosecution of the parent application, U.S. Application Serial No. 09/171,156, now U.S. Patent 6,368,846, to incorporate the above-identified single nucleotide and amino acid change in SEQ ID NOs:61 and 62, and then inadvertently submitted in both the parent application and subsequently in the instant application in a Substitute Sequence Listing. The submission was made by Applicants' agent without the knowledge that the submitted Substitute Sequence Listing had been changed with respect to SEQ ID NOs:61 and

62 from its original form in PCT/US97/05959. It is noted that the paper copy of the original Sequence Listing in the copy of the *original* specification as filed with the instant application is identical to the original Sequence Listing filed in PCT/US97/05959 and in U.S. Application Serial No. 09/171,156 (*i.e.*, it is the Substitute Sequence Listing and computer readable form thereof that contained the single nucleotide and amino acid modification to SEQ ID NOs:61 and 62).

More specifically, during prosecution of U.S. Application Serial No. 09/171,156, in response to a Notice to Comply with Sequence Requirements in U.S. Application Serial No. 09/171,156, Applicants' agent submitted a Substitute Sequence Listing that was believed to be identical to the original Sequence Listing from PCT/US97/05959, and which corrected several errors in the electronic copy of the Sequence Listing that was initially submitted during the prosecution of U.S. Application Serial No. 09/171,156. This same Substitute Sequence Listing was then submitted with the filing of the instant application. However, it now appears that in addition to correcting the errors that were contained in the electronic copy of the original Sequence Listing from PCT/US97/05959, the sequence of SEQ ID NO:61 was also modified to introduce the single nucleotide substitution noted by the Examiner (a change in codon 328-330 from AAT to ATT), which resulted in a substitution of an isoleucine residue for the original asparagine residue in SEQ ID NO:62.

While it is presently unclear to Applicants' or their representatives how this change was introduced into the electronic copy of the Sequence Listing that was used in U.S. Application Serial No. 09/171,156, it is noted that subsequent to the filing of PCT/US97/05959 and U.S. Application Serial No. 09/171,156, it was discovered by the inventors that the codon at positions 328-330 of SEQ ID NO:61 contained what is believed to be a typographical or clerical error, and that the sequence should have been represented at this codon by ATT, resulting in the substitution of an isoleucine for an asparagine in the encoded amino acid sequence. It is noted that SEQ ID NO:63, which was believed to be the exact complement of SEQ ID NO:61, is actually the complement of what is now known to be the correct sequence containing the ATT codon at positions 328-330 (thus being the complement of a nucleic acid sequence encoding a protein having the isoleucine substitution indicated above).

However, it was never Applicants' or Applicants' representative's intention that this particular change to SEQ ID NO:61 be introduced into the Substitute Sequence Listing for submission in U.S.

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Application Serial No. 09/171,156 or the instant application. Furthermore, Applicants' agent was unaware that SEQ ID NO:61 or SEQ ID NO:62 had been altered from the original sequence as described above when the Substitute Sequence Listing was submitted in U.S. Application Serial No. 09/171,156. Therefore, the changes in SEQ ID NO:61(modification of codon 328-330 from AAT to ATT) and SEQ ID NO:62 (substitution of an isoleucine residue for the original asparagine residue) were made inadvertently and without any deceptive intent on the part of Applicants or their representatives.

Therefore, to correct the issue described above, and to remove the inadvertent introduction of new matter into the instant application, Applicants submit herewith a new Substitute Sequence Listing. It is believed that the sequence content of the paper copy and computer readable form of the Substitute Sequence Listing submitted herewith is identical to the sequence content of the original paper copy of the Sequence Listing submitted in each of PCT/US97/05959, in U.S. Application Serial No. 09/171,156, and in the instant application. Furthermore, pursuant to 37 CFR § 1.825(a) and (b) and §1.821(f), Applicants' agent hereby asserts that the content of the paper and computer readable copies of SEQ ID NO:1 through SEQ ID NO:88 submitted herewith are identical and include no new matter.

In view of the foregoing discussion, it is believed that SEQ ID NO:61 and SEQ ID NO:62 in the instant application are identical to SEQ ID NO:61 and SEQ ID NO:62, respectively, from PCT/US97/05959. Therefore, the Examiner is respectfully requested to grant the benefit of priority to PCT/US97/05959 and April 10, 1997.

**Claim Amendments**

Claim 69 has been amended to specify that the claimed protein comprise either the amino acid sequence of SEQ ID 62 or the amino acid sequence encoded by the nucleotide sequence complimentary to SEQ ID NO:63. Similarly, Claim 71 has been amended to specify the claimed protein consist of either such amino acid sequence. Support for such proteins can be found in the specification, for example, on page 22, lines 25-26, through page 23, lines 1-4 and on page 29, lines 1-24.

Newly submitted Claim 77 is drawn to an isolated protein comprising an amino acid sequence encoded by a nucleic acid sequence produced by PCR using a specific template and specific primers.

Similarly, newly submitted Claim 78 is drawn to an isolated protein consisting of such an amino acid sequence. Support for such proteins can be found in the specification, for example, on page 29, lines 1-24, and on page 94, lines 23-26, through page 95, lines 1-15.

Newly submitted Claims 79-80 substantially track previous Claims 72-74.

**Rejections Under 35 USC §102(b)**

(1) The Examiner has rejected Claims 69-70 and 72-75 as being anticipated by Frank et al. (Advances in Veterinary Dermatology Volume 3, Oxford, 1998, pp.201-212). Specifically, the Examiner states that Frank et al. teach the isolation of a protein which, while having an additional 3 amino acids relative to SEQ ID NO:62, otherwise appears to be identical to SEQ ID NO:62. The Examiner further states that Frank et al. teach the translation of a partial cDNA and that dogs previously exposed to this protein exhibit an immune response. The Examiner therefore concludes Frank et al. anticipates Claims 69-70 and 72-75 as written.

Applicants note this rejection is based upon the instant Application having a priority date of March 4, 1999. However, with the submission of the Substitute Sequence Listing, Applicants have corrected the discrepancy between SEQ ID NO:61 and 62 of the instant Application and SEQ ID NO:61 and 62 of Application PCT/US97/05959 to which the instant Application claims priority. Therefore, Applicants assert that the original priority claim is now valid and that the instant Application should be afforded an effective filing date of April 10, 1997, which is the date on which SEQ ID NO:s 61 and 62 were first filed in PCT/US97/05959. In view of the fact that the Frank et al. reference cited by the Examiner was not published until 1998, Applicants contend this reference is not valid as prior art.

(2) The Examiner has also rejected Claims 72-75 as being anticipated by Database Genbank Accession Number U63555 (GI:3805686). Specifically, the Examiner states Accession Number U63555 teaches a fragment of SEQ ID NO:62 that is at least 6 amino acids in length. The Examiner further states that while Accession Number U63555 does not teach that the disclosed polypeptide has the ability to elicit an immune response against SEQ ID NO:62, such a characteristic is an inherent property of the disclosed polypeptide. The Examiner therefore concludes that Accession Number U63555 anticipates Claims 72-75 as written.

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Applicants note that Accession Number U63555 was not made publicly available until October 28, 1998. As outlined *supra*, Applicants assert that the instant Application should be afforded an effective filing date of April 10, 1997. In view of this, Applicants contend Accession Number U63555 is not a valid prior art reference.

### **Conclusion**

Applicants believe the instant claims to be in condition for allowance. In light of the amendments and remarks above, Applicants request the withdrawal of all rejections and solicit allowance of instant claim set. The Examiner is invited to contact the undersigned should any issues remain.

Respectfully submitted,

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